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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,840

09/15/2006

Kenshi Fukumitsu

046124-5446

3420

55694 7590 09/29/2008  
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EXAMINER

EVANS, GEOFFREY S

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

09/29/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,840	<b>Applicant(s)</b> FUKUMITSU, KENSHI	
	<b>Examiner</b> Geoffrey S. Evans	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20070207, 20080311</u> .                                      | 6) <input type="checkbox"/> Other: ____.                          |

### DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5,9-26,28-36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2002/22301 A1 in view of Yoshimura et al. in Japan Patent No. 2003-154,517 A1 and Miura et al. in the article "Formation of Photo-induced Structures in Glasses with Femtosecond Laser" (cited in the Information Disclosure Statement of 7 February 2007). WO 2002/22301 discloses using a laser beam to form modified areas in glass and silicon wafers to be laser cut (broken). Yoshimura et al. teach that voids (tiny round holes) are formed at sites which are irradiated with femtosecond laser pulses that bring about multiple photon absorption (e.g. see paragraphs 16 and 50). Miura et al.'s article shows in figure 4 (see also figure 2) that with a single pulse from a femtosecond laser pulse multiple areas of a glass (transparent) substrate beneath each other are effected. It would have been obvious to adapt WO 2002/22,301 in view of Yoshimura et al. and Miura et al. to provide this to more easily brake the substrate later by producing multiple voids within the workpiece.

3. Claims 6,27 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 2002/22301 in view of Yoshimura et al. in Japan Patent No. 2003-154,517 and Miura et al. as applied to claims 1 and 26 above, and further in view of Hidetsugu's article "Stealth Dicing, its principles and features: a Technology Most Suitable for dicing

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very thin semiconductor wafer" (FP01-0144-00US-HP) submitted by Applicant on 7 February 2007. Hidetsugu teaches according to the translation of paragraph 29 a narrow dicing pitch of 1 micron when using a laser beam. It would have been obvious to adapt WO 2002/22301 in view of Yoshimura et al., Miura et al. and Hidetsugu to provide this to accurately cut the substrate.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fukuyo et al. in U.S. Patent No. 6,992,026 is of the same patent family as WO 2002/22,301.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S. Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 7:00AM to 3:30 PM (flexible).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Geoffrey S Evans/  
Primary Examiner, Art Unit 3742